Agency for Healthcare Research and Quality
Inpatient Quality Indicators (IQIs)

Log of Revisions to IQI Documentation and Software

Updated July 21, 2004

The following table summarizes the revisions made to the IQI software, software documentation and the Guide to Inpatient Quality Indicators (Guide) document since the original release of the version 2.1 revision 1 software and documents in June 2002. The table lists the revision number (e.g., 2 and 3), the date the revision was made, the component(s) affected by the change and a short summary of the changes that were made. For convenience and ease of use, the changes are listed in reverse chronological order with the most recent changes appearing first in the table. This log of revisions is current as of the date noted above.

Revision Number	***Date***	***Component***	***Changes***
3	July 21, 2004	Guide	1. Modified documentation to reflect changes in indicators associated with ICD-9-CM coding updates for FY 2004 (effective 10-1-2003). See separate documentation on ICD-9 coding updates for specific details.[1] 2. Implemented changes to IQI #3, Pediatric Heart Surgery Volume Indicator, both in its inclusion criteria and its exclusion criteria. Inclusion is now defined to be discharges with ICD-9-CM procedure codes for congenital heart disease (1P) in any field or non-specific heart surgery (2P) in any field with ICD-9-CM diagnosis of congenital heart disease (2D) in any field. Exclusions now include MDC 14 (pregnancy, childbirth and pueperium); patients with transcatheter interventions (either 3AP, 3BP, 3CP, 3DP, 3EP with 3D, or 3FP) as single cardiac procedures, performed without bypass (5P) but with catheterization (6P); patients with septal defects (4P) as single cardiac procedures without bypass (5P); heart transplant (7P); premature infants (4D) with PDA closure (3D and 3EP) as only cardiac procedure; age less than 30 days with PDA closure as only cardiac procedure; missing discharge disposition (DISP=missing); and transferring to another short-term hospital (DISP=2). These changes

[1] "Updates to Version 2.1, Revision 3 – ICD-9-CM Coding Updates," http://www.qualityindicators.ahrq.gov/iqi_download.htm

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			were the result of research by the original developers of this indicator[2], and are designed to increase the sensitivity and specificity of the indicator. **Note:** Due to the large number of changes to the pediatric heart surgery indicators, comparing results with past versions is cautioned. 3. Implemented changes to IQI #10, Pediatric Heart Surgery Mortality Indicator, both in its inclusion criteria and its exclusion criteria. Inclusion is now defined to be discharges with ICD-9-CM procedure codes for congenital heart disease (1P) in any field or non-specific heart surgery (2P) in any field with ICD-9-CM diagnosis of congenital heart disease (2D) in any field. Exclusions now include MDC 14 (pregnancy, childbirth and pueperium); patients with transcatheter interventions (either 3AP, 3BP, 3CP, 3DP, 3EP with 3D, or 3FP) as single cardiac procedures, performed without bypass (5P) but with catheterization (6P); patients with septal defects (4P) as single cardiac procedures without bypass (5P); heart transplant (7P); premature infants (4D) with PDA closure (3D and 3EP) as only cardiac procedure; age less than 30 days with PDA closure as only cardiac procedure; missing discharge disposition (DISP=missing); and transferring to another short-term hospital (DISP=2). These changes were the result of research by the original developers of this indicator (see footnote 2), and are designed to increase the sensitivity and specificity of the indicator. 4. Eliminated MDC 14 (pregnancy, childbirth, and pueperium) and MDC 15 (newborns and other neonates) from exclusion criteria for IQI #15, Acute Myocardial Infarction (AMI) Mortality Indicator. This change was made since these patients are at low risk for AMI and removing these patients brings the

[2] Kathy Jenkins et al., Boston Children's Hospital and Harvard University. See Center-specific differences in mortality: preliminary analyses using the Risk Adjustment in Congenital Heart Surgery (RACHS-1) method. J Thorac Cardiovasc Surg. 2002 Jul;124(1):97-104

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			indicator into alignment with other national efforts. The estimated impact is low. 5. Established a new indicator (IQI #32), AMI Mortality Indicator – Without Transfer Cases. Unlike the existing indicator for AMI mortality (IQI #15), it excludes patients transferring from another short-term hospital and patients with missing admission source. This indicator is closely related to the JCAHO indicator for AMI mortality[3] however it is NOT risk adjusted in the same manner as the JCAHO indicator and does not exclude hospice patients (due to inability to identify hospice patients in hospital discharge data). 6. Implemented a change to IQI #21, Cesarean Section Delivery Rate to exclude patients with abnormal presentation, preterm delivery, fetal death, or multiple gestation. These changes create an indicator that closely mirrors indicators used by Healthy People 2010[4] . 7. Created a new indicator (IQI #33), Primary Cesarean Delivery Rate which closely mirrors the JCAHO measure for Cesarean Delivery[5]. This indicator excludes patients with abnormal presentation, preterm delivery, fetal death, multiple gestation, and patients with a prior Cesarean Section. 8. Implemented a change to IQI #22, Vaginal Birth After Cesarean Section (VBAC), Uncomplicated to exclude patients with diagnoses describing abnormal presentation, preterm delivery, fetal death or multiple gestation. 9. Created new indicator (IQI #34), Vaginal Birth After Cesarean Section (VBAC) All, which does not exclude patients with diagnoses of abnormal presentation, preterm delivery, fetal death, or multiple gestation.

[3] http://www.jcaho.org/pms/core+measures/information+on+final+specifications.htm. See AMI-9 and Appendix A
[4] http://www.healthypeople.gov/Document/html/tracking/od16.htm#obstetcare. See 16-9
[5] http://www.jcaho.org/pms/core+measures/information+on+final+specifications.htm. See PR-1 and Appendix A

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			10. Implemented a change to IQI #13, Craniotomy Mortality Rate. Restructuring of the DRGs for craniotomy occurred in FY 2003. As a result, the including definition of craniotomy was revised to include both DRG 001 and DRG 002 (Craniotomy with and without comorbidities and complications, >17 years), DRG 528 (Intracranial vascular procedure with principal diagnosis of hemorrhage), and DRG 529 and 530 (Ventricular shunt procedures with and without comorbidities and complications). To maintain comparability with previous years of data, patients with a principle diagnosis of head trauma are now excluded from this indicator. Empirical analyses demonstrate minimal impact of these changes for this indicator.
3	July 21, 2004	Software (SAS and SPSS)	1. Implemented syntax changes associated with ICD-9-CM coding updates from FY 2004 (effective 10-1-2003). See separate documentation on ICD-9 coding updates for specific details. 2. Implemented the option to aggregate all area-based indicators by Metropolitan Statistical Area (MSA) and County or just by County. 3. Implemented all syntax changes required to implement the indicator modifications (noted above under Guide) and incorporated the related documentation in the Software manuals. 4. County-based population files are now distributed with the SAS and SPSS software, and the names of the population files now have the letters “cty” in their third, fourth and fifth positions instead of the letters “pop”. 5. Converted mean-centering routine for risk-adjustment to use population case-mix of APR-DRG as reference population for Age-Sex only risk-adjustment. This change resulting in the age-sex only risk adjustment scaling closer to the mean.

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3	July 21, 2004	Software (SAS)	1. Implemented changes to all mortality indicators excluding cases for which the value for the variable "disposition of patient" (DISP) is missing, unknown or invalid. The SAS software is now consistent with the SPSS versions that have always excluded cases with missing, unknown, or invalid disposition. 2. Inserted "IQ" in format names for age, sex and APR-DRG aggregations in SAS programs to distinguish these formats from similarly named formats used by other indicator software.
2	Sept. 4, 2003	Software (SAS and SPSS) and Guide	1. Congestive Heart Failure (CHF) Mortality Rate: The denominator exclusion of patients undergoing a cardiac procedure was removed from CHF Mortality Rate. This exclusion was unnecessary due to the use of APR-DRGs for risk adjustment and to provide consistency across indicators (e.g. AMI patients with these procedures are not excluded). 2. Bilateral Heart Catheterization Rate: Codes 404.xx for hypertensive heart disease were added to the denominator exclusion. 3. Pediatric Heart Surgery Volume and Mortality Rate: The code 36.3 was added to numerator including definition of pediatric heart surgery (#2P) to reflect coding before October 1, 1998. 4. Mortality after Hip Replacement: The code 716.69 was deleted from the including definition of osteoarthritis (the fifth digit "9" indicating "multiple sites" is not valid for 716.6x).
2	Sept. 4, 2003	Software (SAS and SPSS)	1. All parameter text files were renamed to refer specifically to the IQI module (e.g., use of IQ in file name). These changes are also reflected in the software documentation. 2. All parameter files were rerun using the updated software and Year 2000 HCUP SID data.

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			3. Population files for 2000, and 2001 were re-estimated using the latest available census files.
2	Sept. 4, 2003	Software (SPSS)	The treatment of missing data by SPSS was changed to mirror the treatment of missing data by SAS, specifically the software requires confirmation for the assignment of a poor outcome or negative event. For instance, in order to be assigned as a death, each case must actually be coded as a death. Missing data is considered neutral. Missing data for some elements results in the exclusion of that case from the denominator. For a few other elements, the case is retained. Table 5 of the Software Documentation lists the impact of missing data for each data element.